1.28.22
3711

Certified Mail – Return Receipt Requested
7019 0140 0000 6006 3711

Shell Chemical LP- Deer Park

5900 Highway 225
Deer Park, TX 77536
Tel +1 713 246 7278
Fax + 1-713-246-6707
E-mail nicole.roper@shell.com
Internet http://www.shelldeerpark.com

Director, Air Enforcement Division
Office of Regulatory Enforcement
U.S. Environmental Protection Agency, Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

July 29, 2022 Date Correction - January 28. 2022

RE: DEER PARK REFINERY LIMITED PARTNERSHIP, SHELL CHEMICAL LP& SHELL OIL COMPANY CONSENT DECREE, CIVIL ACTION No. 4:13-cv-02009 (lodged 7/10/2013, entered 6/6/2014) Semi-Annual Progress Report

Dear Sir or Madam:

Please find attached the semi-annual progress report for the Shell Chemical LP- Deer Park pursuant to item 85 of the Shell Oil Company, Deer Park Refining Limited Partnership and Shell Chemical LP (SDP) Consent Decree. The decree was lodged on July 10, 2013 and entered on June 6, 2014. This report covers the period from July 1 to December 31, 2021.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Sincerely,

Nicole Roper

Nicole Roper
Environmental Team Lead, Shell Chemical LP- Deer Park

Attachments

cc (via email):

Robert Parrish - Parrish.robert@epa.gov
Patrick Foley - Foley.patrick@epa.gov
Dorothy Crawford - Crawford.dorothy@epa.gov
EPA Region 6 - R6CAACDDeliverables@epa.gov

Bcc via email:

Kim.Lesniak@shell.com
Kenyatta.Miles@shell.com
Laura.Brennan@deerparkrefinery.com
Nicole.roper@shell.com
Sharepoint 1520.02

Copy to Projects drive: 2013 Flare CD\Reports\2022\Jan

SHELL OIL COMPANY DEER PARK REFINING LIMITED PARTNERSHIP
AND SHELL CHEMICAL LP

Flare Minimization Consent Decree Semi Annual Report

Case No. 4:13-cv-2009

Lodged on 7/10/2013
Entered on 6/6/2014

1/29/2022

Table of Contents

Shell Deer Park
Consent Decree Semi-Annual Compliance Report
Case No. 4:13-cv-2009
January 29, 2022
Summary Page

Shell Deer Park's semiannual compliance report as required by Section IX Reporting Requirements (paragraph 85) contains the following elements:

- A progress report on the implementation of Section V Compliance Requirements including:
  - Instrumentation and Monitoring Systems
  - Waste Gas Minimization Plan
  - Flare Gas Recovery Systems
  - Flaring Limitations
  - Flare Combustion Efficiency
  - NSPS Subpart A, J, and Ja
  - Eliminating Fuel Gas Flow from Refinery to Chemical Plant Flares
  - A description of any problems anticipated with meeting Section V Requirements
  - Monitoring, override and exceedance reporting (paragraph 86)
- A description of the status of mitigation projects in Section VII Mitigation Projects
  - North Effluent Treater Controls
  - Tank Controls
  - ACU and BEU Controls
- A description of the status of SEPS in Section VIII Supplemental Environmental Projects (SEPs)
  - Fence Line Open Path Monitoring SEP
  - Diesel Retrofit SEP
- Emissions Data (paragraph 87)

Progress Report
Section V Compliance Requirements
A. Instrumentation and Monitoring System

Report Date: *January 29, 2022*

Requirement: (para 16)
Flare Data and Monitoring Systems and Protocol Report Section

For the Covered Flares, by June 6, 2015 (365 days after entry), Shell Deer Park shall submit a report that provides the following information:

a. Information, diagrams and drawings showing the location of each flare on a facility plot plan, a general description of each flare, its components, including flare stack, tip, knockout pot or surge drum, water seal, flare headers, sweep, purge, pilot and supplemental gas systems, assist and ignition system, flare gas recovery system (including compressor design capacities, water seal, rupture disc or other diversion device to flare, flare design parameters such as maximum vent gas flowrate, sweep, purge, pilot and supplemental gas flow rates, and minimum total steam rate; detailed description of gases venting to flare (such as type of gas used, actual set operating flow and average lower heating value of each gas used); steam introduction locations
b. Detailed description of each monitoring system installed, including manufacturer, date of installation,
c. Narrative description of monitoring methods and calculations used to comply with combustion efficiency requirements and
d. Identification of the calibration gases used to QA/QC the monitoring systems.

Status: *Shell Deer Park submitted the Protocol Report to the EPA on June 5, 2015.*

Requirement: (Paragraph 17 and para 18 – 24)
Installation and Operation of Monitoring Systems

For the Regular Use Covered Flares, Shell Deer Park shall complete the installation by 12/31/2013 and commence the operation of the instrumentation, controls and monitoring systems meeting specifications in Appendix 1.10. SDP is required to maintain records related to the instrumentation by 3/31/2014.

1. Paragraph 18 - Vent Gas Flow Monitoring System – Continuously measure and calculate the total flow (in scfm and pounds per hour) of all vent gas. Continuously analyze pressure and temperature at each point of vent gas flow measurement and have retractable or removal sensors at each point of vent gas flow measurement to ensure that the vent gas flow monitoring system is maintainable online. Record 5 minute block averages.
2. Paragraph 19 - Vent Gas Average Molecular Weight Analyzer – Continuously analyze the average molecular weight of all vent gas. This analysis may be performed by an instrument that also serves as part of the vent gas flow monitoring system. Record 5 minute block averages.
3. Paragraph 20 - Total Steam Flow Monitoring System – Continuously measure and calculate the flow (in scfm and pound per hour) the total steam to each covered flare and continuously analyze the pressure and temperature of steam at a representative point of steam flow measurement. Record 5 minute block averages.
4. Paragraph 21 - Steam Control Equipment
5. Paragraph 22- Gas Chromatograph or Net Heating Value Analyzer – Record 15 minute block averages.
6. Paragraph 23 - Meteorological Station - Record 5minute block averages.
7. Paragraph 24 - Video Camera Record at least - 4 frames per minute.

Status: *Shell Deer Park completed the installation by December 31, 2013 and commenced the operation of the instrumentation, control, and monitoring systems meeting specifications in Appendix 1.10 at all covered regular use flares. Recordkeeping of flare parameters at the time intervals outlined in paragraph*

27 began March 31, 2014. Shell installed a meteorological station at the facility as required. The table below reflects the equipment tags assigned to the required equipment in Shell Deer Park's control system.

Flare	Vent Gas Flow Indication	Vent Gas Temp Indication	Vent Gas Pressure Indication	Vent Gas MW – GC	Steam Flow Indication	Video Camera	Automatic Nat Gas Control [1]	Automatic Steam Control	Total Sulfur Analyzer
Coker	FI31451	TI31451	PI31451	AI31450	FI31481	Coker Camera	FV31700	FV31481	AX33900A
East Property	FI30418	TI30418	PI30418	AI30411	FI30422	EPF Camera	FV30021	FV30022	AI309060A
Girbotol	FI91205	TI92058	PI92058	AI62057	FI92209	Girbotol Camera	FV31416	FV92209	AX92420A
North Property	FI89632	TI89632	PI89632	AI89699	FI89000	NPF Camera	FV89628	FV89000	AI89975A
West Property	FI63631	TI63631	PI63631	AI63654	FI63568	WPF Camera	FV63659	FV63821	AX63910A
HIPA	FI1494	TI1384	PI1384	AI1333	FI1394	HIPA Camera	FV1352	FV1394	NA
Olefins II Elevated	FI504	TI701	PI701	AI506	FI527	OPII Camera	PV5859	FV527	NA
Olefins III Elevated	FI5901	TI5946	PI5946	AI5565	FI5851	OPIII Camera	FV5851	FV5851	NA
Olefins III Ground	FI5831	TI5947	PI5947	AI5564	FI5933	Ground Camera	FV5934	FV5933	NA

[1] Paragraph 53a did not require Automatic Natural Gas Control for the OPII Elevated flare until 6/30/2016 and the OPIII Elevated flare until 6/30/2018.

Requirement: (para 28)
Operation and Maintenance of Monitoring Systems

SDP shall operate each of the instruments and monitoring systems required in Paragraph 18 – 20 and 22 – 24 on a continuous basis when the associated temporary, portable, or regular use flare is in operation, beginning 10/1/2014.

Status: *SDP has not utilized any temporary or portable flares during this reporting period. During the reporting quarters, 3rd-4th quarters of 2021, downtime was calculated in accordance with 40 CFR 60.13(h)(2) and Paragraph VI of Appendix 1.10.*

Downtime at the covered flares is as described in Attachment 1during the reporting quarters. Note that quality assurance calibration hours are not included in the downtime calculation for analyzers.

Consent Decree Semi-Annual Compliance Report
Section V Compliance Requirements
B. Determining Whether a Covered Flare that has a Water Seal is not Receiving Potentially Recoverable Gas Flow

Requirement: (para 29)

Potentially Recoverable Gas to Flare:

For a flare equipped with a water seal, Shell may consider the flare as not receiving Potentially Recoverable Gas flow if:

1. The differential pressure between the inlet pressure and the out pressure of the water seal drum is less than the water seal pressure as set by the static head of water between the dip tube opening and level-setting weir in the drum
2. The water level in the drum is at the level of the weir, and
3. There is no flow of gas (supplemental or vent gas) directed to the flare downstream of the seal drum.

Hydrogen produced by the Pressure Swing Absorption (PSA) unit and introduced between the water seal and flare tip is not Potentially Recoverable Gas.

Status: *Shell utilizes the allowance of the flare not receiving Potentially Recoverable Gas to declare the covered flares as process safety devices instead of air pollution control devices. Under these conditions, Shell does not have to comply with the compliance requirements and work standards of the Consent Decree. The no flow assurance parameters have been installed at the Girbotol Flare, East Property Flare, OP2 Elevated Flare, and OP3 Elevated Flare.*

Consent Decree Semi-Annual Compliance Report
Section V Compliance Requirements
C. Waste Gas Minimization

Report Date: *January 29, 2022*

Requirement: (para 30)
Initial Waste Gas Minimization Plan (IWGMP)-
For each Regular Use Covered Flare, Shell Deer Park shall submit an Initial Waste Gas Minimization Plan (IWGMP) that discusses and evaluates flaring prevention measures both facility wide and flare specific basis. The IWGMP shall include:

1. Any updates to the Flare data and Monitoring systems and Protocol Report
2. Waste Gas Mapping – Identify the volumetric flow of waste gas, in scfm on a 30-day rolling average bass, that is vented to each flare for a period of one year prior to 31 days before submission of the IWGMP
3. Baseload Waste Gas Flow Rates – Determine baseload waste gas flow rate, in scfd, to each flare for a period of one year prior to 31 days before submission of the IWGMP.
4. Identification of Constituent Gases – Using best efforts, identify the constituent gases within each flare's waste gas and the percentage contribution of each constituent during baseload conditions.
5. Waste Gas Mapping
6. Reductions Previously Realized
7. Planned Reductions
8. Taking a Covered Flare Permanently Out of Service
9. Prevention Measures
10. Schedule for implementation of planned reductions

Shell Deer Park shall update under separate cover the WGMP for the 12 month period after the period covered by IWGMP to include updated waste gas mapping, reductions based on root cause analysis and revised schedule.

Subsequent updates to WGMP shall be submitted as a part of the semi-annual report.

Status: *The initial evaluation was submitted June 5, 2015 with subsequent updates submitted on an annual basis in November of each year. The fifth update to Shell Deer Park's Waste Gas Minimization Plan was submitted to the EPA in November 2019. No changes requiring WGMP updates have occurred since the submittal of the last update. WGMP updates will be submitted with semiannual reports as needed. An update to the Waste Gas Volumetric and Mass Flow Rates is included with this submittal.*

Requirement: (para 35)
Root Cause Analysis for Reportable Flaring Incidents -
No later than forty-five (45) days following a Reportable Flaring incident, Shell Deer Park shall conduct an investigation into the Root cause(s) of the incident and prepare and keep record of and report via the semi-annual report a summary of each Reportable Flaring incident that occurred during the reporting period. The summary shall include: date, duration, amount of SO_2 and VOC released, root cause(s), corrective action(s) completed and corrective action(s) outstanding and an analysis of any trends identified in terms of the number of incidents, root causes or the types of corrective actions.

Status: *Shell Deer Park has implemented procedures for Root Cause Analysis and Corrective Action for reportable flaring incidents on June 6, 2015. Per paragraph 38b for refinery flares, as of November 11, 2015 SPD will no longer report refinery incidents in this report and will comply with the requirements of NSPS Ja. Alternate base load scenarios were identified as allowed in NSPS Ja for the startup, shutdown of process safety events and incorporated into the RCA work process. The following flare incident for non-Refinery flares occurred during this reporting period:*

Date and Flare	***Duration (hours)***	***Amount of SO_2 and VOC released (lb)***	***Root Cause(s)***	***Corrective Actions Completed***	***Corrective Actions Still Outstanding***
9/8/2021 OP2 Elevated	*16*	*8535 lb VOC 0 lb SO2*	*ER compressor trip.*	*Immediate actions were taken to stabilize the process upset.*	*None*
12/5/2021 Olefins Ground, OP2 Elevated and OP3 Elevated Flares	*27 days*	*1567 lb VOC 0 SO2*	*ER compressor planned shut down*	*Immediate actions were taken to slowly take equipment offline to allow minimum flaring during the shutdown of the compressor. Please note site was in shutdown mode through 12/31/2021. Flaring through ground flare continued while in shutdown mode.*	*None*

Consent Decree Semi-Annual Compliance Report
Section V Compliance Requirements
D. Flare Gas Recovery Systems at SDP Refinery

Report Date: *January 29, 2022*

Requirement: (para 39)
Flare Gas Recovery Systems at the SDP Refinery

Shell Deer Park shall complete installation and commence operation of Flare Gas Recovery (FGR) systems at the SDP refinery.

Status: *Shell Deer Park has completed installation and has commenced operation of a Flare Gas Recovery system on the East Property flare on December 31, 2012. Each SDP Refinery flare is equipped with a FGR system. Each Refinery FGRS has the capacity required by paragraph 39. No change in FGRS capacity is anticipated.*

Requirement: (para 40)
Compressor Availability
By no later than December 31, 2014, SDP shall comply with the following requirements when Potentially Recoverable Gas is being generated:

1. For CPU and EPF/Girbotol Flare Gas Recovery Systems: SDP shall have one compressor available for operation and/or in operation 98% of the time and two compressors available for operation and/or in operation 90% of the time. Period of maintenance and subsequent restart shall not exceed 1344 hours per compressor in a five-year rolling sum period, rolled daily.

2. For Coker Flare Gas Recovery System: SDP shall have five compressors available for operation and/or in operation 95% of the time and four compressors available for operation and/or in operation at all times. Periods of maintenance and subsequent restart shall not exceed 336 hours for shared equipment in the FGRS in a five-year rolling sum period, rolled daily.

Status: *SDP has procedures and work practices in place to meet this requirement. Shell started tracking compressor availability as of July 1, 2015. For the period of July 1 to December 31 ,2021, all FGRS met their operational requirements for individual and backup compressor.*

Consent Decree Semi-Annual Compliance Report
Section V Compliance Requirements
E. Flaring Limitations at SDP Refinery

Report Date: *January 29, 2022*

Requirement: (para 41)
Flaring Limitations and Emission Standard Exceedances
By not later than December 31, 2014, SDP shall comply with the Refinery wide 365-day average flare flow limitation. By not later than December 31, 2017, SDP shall comply with the Refinery wide 30-day average flare flow limitation:

Refinery Wide Flaring Limitation 30 –day Rolling Average: 2,455,944 scfd
Refinery Wide Flaring Limitation 365-day Rolling Average: 1,637,296 scfd

Status: *SDP has procedures and work practices to address this requirement. Beginning July 1, 2015, Shell Deer Park started collecting data for the 365-day flare flow limit. Compliance with these limits was maintained throughout the reporting period as calculated using the allowable limitations described in paragraph 44.*

Consent Decree Semi-Annual Compliance Report
Section V: Compliance Requirements
F. Flare Gas Recovery Systems - Olefins Flares – SDP Chemical Plant

Report Date: *January 29, 2022*

Requirement (para 45)
Olefins FGRs
Shell Deer Park shall complete installation and commence operation of one or more Flare Gas Recovery Systems (FGRS) for the Olefins flares, the operating design capacity shall be a minimum of 270 kscfh and shall include one installed duplicate spare compressor by December 31, 2017.

Status: *SDP completed installation and commenced operation of a FGR system at the Olefins flares with a 270 kfch capacity and include one installed duplicate compressor by December 31, 2017.*

Requirement: (para 47)
Olefins FGR Compressor Availability
By no later than June 30, 2018, SDP shall comply with the following requirements when Potentially Recoverable Gas is being generated:

For Olefins Flare Gas Recovery Systems: SDP shall have one compressor available for operation and/or in operation 98% of the time and two compressors available for operation and/or in operation 90% of the time. Period of maintenance and subsequent restart shall not exceed 1344 hours per compressor in a five-year rolling sum period, rolled daily.

Status: *Shell has completed a project to install a flare gas compressor system on the Olefins flares. The scope of the project included the capability to maintain the compressor availability stated above when potentially recoverable gas is generated. For the period from July 1 to December 31, 2021, the compressor availability requirements for the flare gas recovery system were met.*

Shell Deer Park
Consent Decree Semi-Annual Compliance Report
Section V: Compliance Requirements
G. Flaring Limitations – HIPA and A&S Flares– SDP Chemical Plant

Report Date: *January 29, 2022*

Requirement: (para 48)
Convert A&S Flare to Temporary Use
Shell Deer Park shall convert the A&S Flare to a temporary use flare by rerouting flow from the A&S Flare to the HIPA Flare by June 30, 2013.

Status:
Shell Deer Park rerouted the flow from the A&S Flare to the HIPA Flare prior to June 30, 2013.

Requirement: (para 49)
HIPA Flare VOC Limitation
By no later than 24 months after the Date of Entry (June 6, 2014), SDP shall not emit from the HIPA flare more than 25 tons per year of VOCs in a 365-day rolling sum period, summed daily.

Status: *Shell has procedures in place to monitor the VOC content of the HIPA flare to assure emissions are less than 25 tons per year of VOCs. This limit became effective June 6, 2016. The 365-day rolling average VOC emissions at the end of this reporting period are 6.5 tons.*

Shell Deer Park
Consent Decree Semi-Annual Compliance Report
Section V: Compliance Requirements
H. Flare Combustion Efficiency

Report Date: *January 29, 2022*
Requirement: (para 50 - 56*)*
Flare Combustion Efficiency
By no later than Date of Entry, SDP shall comply with the following requirements when each covered flare is in operation: operation during emissions venting, no visible emissions, flame presence, exit velocity, operate according to design and using good air pollution control practices, net heating value of vent gas.

By not later than 365 days after Date of Entry, SDP shall comply with the following requirements when each covered flare is in operation: net heat value of vent gas, net heating value of the combustion zone, steam-to-vent gas ratio, and minimum momentum flux ratio or discontinuous wake dominate flow.

Status: *SDP has maintained records to demonstrate compliance with the applicable 40 CFR Subparts 60, 61 and 63 requirements regarding flares (when in operation as pollution control devices): visible emissions, flame presence, exit velocity, operate according to design, and net heating value of the vent gas requirements. At all times that the flare is required to meet the combustion efficiency, SDP has implemented good air pollution control practices including during periods of Startup, Shutdown and/or Malfunctions. All of Shell Deer Park's flares met the applicable requirements during the reporting period except as provided in Attachment III.*

Requirement: *(para 53 and 54)*
Manual Override of Automatic Control Systems

Beginning on Date of Entry (June 6, 2014), SDP shall operate each of the automatic control systems for Supplemental Gas and Total Steam Mass Flow as required in Paragraph 18 – 20 and 22 – 24 on a continuous basis when the associated flare is in operation. The applicability date for Olefins II flares is June 30, 2016 and Olefins III flare is June 30, 2018. Manual override is limited to 110 hours per calendar quarter, except for periods when instruments are not functioning or to achieve any of the following reasons:

a. Stop Smoke Emissions that are occurring
b. Meet the Net Heating Value requirements
c. Prevent extinguishing the flare
d. Protect personnel and process safety
e. Stop Discontinuous Wake Dominated Flow, and/or
f. Stop acoustic disturbances that are occurring.
g. Instrument Downtime

Status: *Except as indicated in Attachment II, there were no manual overrides of the automatic control systems for the covered flares. Where manual overrides occurred, the total hours of manual overrides of the automatic control systems – supplemental gas or total steam – and causes due to the exceptions in Paragraph 54 are catalogued in the tables. If the cause of the override is not exempted in Paragraph 54*

or the total hours of override exceeded 110 hours per calendar quarter or 5% of the operating time, reason(s) for the override are summarized.

Requirement: (para 56)
Net Heating Value Standards:
Beginning on the Date of Lodging (July 10, 2013), SDP shall operate each flare with a NHVvg of greater than or equal to 300 BTU/scf at all time that the gas being combusted in the flare is subject to control. By not later than June 6, 2015, SDP shall calculate an NHV cz-limit at each flare and shall operate each flare so that NHVcz is greater than or equal to its NHVcz-limit on a three-hour rolling average.

Status: Except as indicated Attachment IV under the requirements for paragraphs 57-59, there were no instances where Shell Deer Park did not meet the Net Heating Value requirements at the flares.

Requirement: (para 57- 59)
S/Vg and Discontinuous Wake Dominated Flow Standards:
Beginning on the Date of Lodging (July 10, 2013), SDP shall use best efforts to operate each flare with a steam–to-vent gas mass ratio of less than or equal to 3.0 on a one-hour rolling average, rolled every five minutes, at all time that the gas being combusted in the flare is subject to control. Beginning on June 30, 2014, SDP was required to operate the Coker and West Property flares at less than or equal to an S/VG_{mass} of 3.0 and must comply with the net heating value of the combustion zone requirements.

By no later than June 6, 2015, SDP shall either comply with a momentum flux ratio or discontinuous wake dominated flow requirements. Paragraph 58b requires that SDP to select the requirements of either paragraph 58.c or 58.d and to report the compliance option selected in the first semiannual report after the compliance date.

Status: *Shell Deer Park has made best efforts to operate each flare with a steam-to-vent gas mass ratio of less than or equal to 3.0 when vent gas is routed to the flare. Other than times allowed in Paragraph 61, the Coker and West Property flares maintained compliance with this requirement at all time during the reporting period. SDP has elected the Discontinuous Wake Dominated Flow (DWDF) prohibition standard for the Coker and West Property flares. Except as indicated in Attachment III under the requirements of paragraphs 57 – 59, there were no instances where Shell Deer Park did not meet the Net Heating Value requirements at the flares.*

Requirement (para 57 – 59)
Work Practice Standards

By no later than 365 days after Date of Entry, SDP shall comply with the following requirements when each covered flare is in operation: net heating value of the combustion zone, steam-to-vent gas ratio, and minimum momentum flux ratio or discontinuous wake dominated flow.

Status: *SDP has maintained records to demonstrate compliance with the work practice standards: net heating value of combustion zone, steam-to-vent gas ratio, and discontinuous wake dominated flow except as provided in Attachment III and Attachment IV.*

Additional Reporting Requirement:

Requirement: (para 87)
Annual Emissions
SDP shall provide for each covered flare, for the prior calendar year, the amount of emissions of the following compounds: VOCs, SO_2, H_2S, CO_2, methane and ethane for the semi-annual report of July 31 each year.

Status: *SDP has procedures and work practices to address this requirement. Annual emissions for calendar year 2020 are presented in the table below. A 2021 update will be provided in the next semiannual report.*

Flare Name	Pollutant Emissions (tons)					
	VOC	SO_2	H_2S	CO_2	Methane	Ethane
Coker Flare	2.49	6.42	0.35	6,780	21.59	1.42
East Property Flare	5.01	1.65	0.16	41,535	113.41	7.33
North Property Flare	20.63	5.41	0.45	16,938	37.62	7.72
OP2 Elevated Flare	12.50	7.23	0	6,404	4.93	1.07
OP3 Elevated Flare	21.22	0.00	0	7,954	10.02	3.82
OP3 Ground Flare	53.91	7.23	0	24,875	34.31	9.21
West Property Flare	2.47	5.38	0.04	10,791	35.83	2.15
HIPA Flare	7.79	0.00	0	9,191	66.39	3.62
Girbotol Flare	0.08	0.00	0	265	0.84	0.05

Consent Decree Semi-Annual Compliance Report
Section VII: Mitigation Projects
I. North Effluent Treater Controls (Appendix 2.6)

Report Date: *January 29, 2022*

Requirement:
By no later than December 31, 2015, SDP shall undertake all necessary modifications to the Manhole 4 Sump and the Trickling Filter Sump such that each of them conforms to the requirements of 40 CFR 61.346(a). SDP shall also install on each of these sumps a closed vent system and control device. The control device shall conform to all requirements of 40 CFR 61.349.

Status: *Shell Deer Park has installed covers over the Manhole 4 Sump and the Trickling Filter Sump. The covers vent to a carbon adsorption system, approximately 55 gallon size, consisting of dual canisters in series. Installation of the closed vent system and carbon adsorption system were completed per deadline (12/31/2015). Currently SPD is monitoring for breakthrough using 50 ppm VOC as the threshold. Shell Deer Park prepared procedures for monitoring and subsequent replacement of carbon system. SDP has completed the implementation of this project per the compliance date. Monitoring results can be found in Attachment IX. Prior to this reporting period, the Trickle Filter Sump was rerouted to the flare booster system, therefore carbon canisters are no longer present on that system.*

Requirement:
Modify DAF and Remove Trickle Filter from service.
By no later than December 31, 2019, SDP shall undertake one of the following actions at the Dissolved Air Flotation (DAF) device:

1. Modify DAF to install a closed vent system and control device that conform with 40 CFR 61.349(a)(1) and 61.349(a) (2)(i) or (ii) or (iii).
2. Replace DAF with a new DAF that conforms with the requirements of 40 CFR 61.347 as it pertains to a closed vent system and control device.
3. Remove DAF permanently from service. If SDP elects to use this option, SDP shall either
    a. Send waste stream offsite by means of hard-piped conveyance system to a federally-permitted wastewater treatment plant, or
    b. Ensure that the waste stream that is no longer directed to the DAF is transferred to a waste management unit that is covered and controlled in conformance with 40 CFR Part 61, Subpart FF.

Status: *Shell Deer Park completed the removal of the Trickle Filter from service and the modification of the DAF during this reporting period consistent with the above stated requirement.*

Consent Decree Semi-Annual Compliance Report
Section VII: Mitigation Projects
J. Tank Controls (Appendix 2.7)

Report Date: *January 29, 2022*

Requirement:
Replacement of Tanks TOL-912 and TOL-913
By no later than July 1, 2015, Shell shall take Tanks TOL-912 and TOL-913 permanently out of service and replace them with Tanks TOL-901 and TOL-911. Prior to July 1, 2015, Tanks TOL-901 and TOL-911 shall be retrofitted with an aluminum geodesic done to mitigate the effect of wind on emissions.

Status: *Tank TOL-912 was permanently removed from service on October 1, 2014. Tank TOL-911 has been retrofitted with an aluminum geodesic dome on December 31, 2014. Tank TOL-913 was permanently removed from service on June 28, 2015. Tank TOL-901 has been retrofitted with an aluminum geodesic dome on June 30, 2015.*

Requirement:
Inspection of Tank TOL-920
By no later than December 31, 2013, Shell shall take Tank TOL-920 temporarily out of service for full internal inspection. SDP shall make any repairs necessary to assure that the tank is in good working order and complies with all applicable regulatory control requirements.

Status: *Tank TOL-920 was removed from service on December 18, 2013. An internal inspection was performed on the tank and repairs made: A new primary seal (mechanical shoe) was installed on June 20, 2014.*

Requirement:
Infrared Monitoring of ACU/BEU Equipment

By no later than one month after date of entry (July 6, 2014) SDP shall a once-every-two-calendar-weeks (*i.e.*, bi-weekly) Infrared Gas Imagining Program of the tanks associated with the ACU/BEU units (hydrocarbons are stored in a tank) using infrared gas-imaging cameras such as FLIR cameras or their equivalent.

Infrared gas-imaging for ACU/BEU equipment that contains VOCs greater than 5% shall occur as follows: Pumps – biweekly; atmospheric PRVs- biweekly; valves – monthly; and connectors – quarterly. A trained operator shall conduct the observations utilizing Method 21. Components that exceed regulatory requirements will be repaired consistent with existing regulations.

Status: *Shell started a bi-weekly infrared imaging of the tanks associated with the ACU/BEU units as outlined in Attachment V: ACU/BEU tanks. All tanks, pumps, atmospheric PRVs, valves and connectors in ACU/BEU service were imaged according to the monitoring frequency specified in App. 2.7 and 2.8. The specifications of the camera used are provided in Attachment VI: Infrared Camera Specifications. Imaging was done in enhanced detection and automatic mode contrast and brightness. The results of the*

imaging are presented in Attachment VII: Infrared Imaging Results. Where static imaging resulted in observed emissions as indicated by any organic gases on the screen of the IR camera, subsequent visual inspections were performed. Results of the inspections are also provided in Attachment VII. SDP performed the visual inspections within the required 48 hours of monitoring. If failures were noted on the inspection records, repairs were completed and recorded in Attachment X. There have not been any failures found during the visual inspections of the ACU/BEU tanks in this program. Therefore, no notification of failure or internal floating roof repair notification has been required.

Other equipment monitored has been entered into the SDP LDAR database and repairs consistent with existent regulations were made.

Consent Decree Semi-Annual Compliance Report
Section VII: Mitigation Projects
K. ACU and BEU Controls (Appendix 2.8)

Report Date: *January 29, 2022*

Requirement:
LDAR Audit of PRV in ACU/BEU
By no later than six months after the Date of Entry (June 6, 2014), SDP shall retain a third-party contractor to undertake a review of the pressure relief valves (PRVs) in the ACU and BEU unit, as provided in the most current LDAR database. The third-party contractor shall make at least the following determinations:

1.) Location of the PRV
2.) Size of the PRV
3.) "State" of the process fluid in contact with the PRV
4.) Whether the PRV is in vacuum service
5.) Whether the PRV vents to the atmosphere
6.) Appropriate monitoring frequency for the PRV
7.) Appropriate monitoring methods for the PRV
8.) Each regulatory requirement applicable to the PRV

After completing the review, the third-party contractor shall discuss its determinations with SDP and SDP shall make final decisions regarding each applicable regulatory requirement for each PRV. SDP shall update its LDAR database as necessary to accurately reflect the final decisions made by no later than June 6, 2015 - twelve (12) months after Date of Entry.

Status: *A third-party contractor, ENRUD, conducted a review of the PRVs in the current LDAR database for the ACU and BEU units. ENRUD provided a final report to SDP. SDP has implemented the recommendations from the report by updating the LDAR database on June 30, 2015.*

Requirement:
LDAR Audit of DTM and UTM Components in ACU/BEU
By no later than six (6) months after the Date of Entry (June 6, 2014), SDP shall retain a third-party contractor to undertake a review of SDPs designations of "difficult-to-monitor" (DTM) and "unsafe-to-monitor" (UTM) pieces of equipment in the ACU and BEU as listed in the most current LDAR database for these units. After completing the review, the third-party contractor shall discuss its determinations with SDP and SDP shall make final decisions regarding each applicable regulatory requirement for each DTM and UTM. SDP shall update its LDAR database as necessary to accurately reflect the final decisions made by no later than June 6, 2015 - twelve (12) months after Date of Entry.

Status: *A third-party contractor, ENRUD, has conducted a review of the DTMs and UTMs in the current LDAR database for the ACU and BEU units. ENRUD provided a final report to SDP. SDP has implemented the recommendations from the report by updating the LDAR database on June 30, 2015.*

Requirement:
Monitoring of ACU/BEU Equipment
By no later than six (6) months after the Date of Entry (June 6, 2014), SDP shall retain a third-party contractor to undertake a comparative monitoring review of equipment in the ACU and BEU as listed in the most current LDAR database for these units. After completing the review, the third-party contractor shall calculate a leak percentage and leak ratio by equipment type and discuss its findings with SDP. The third –party contractor shall provide its opinion about possible causes and corrective actions in a report to SDP for components with leak ratio of 3.0 or higher and a comparative monitoring leak percentage of 0.5 or higher. SDP shall make final decisions regarding a corrective action plan (CAP) for each component type with a comparative monitoring leak ratio of 3.0 or higher and a leak percentage of 0.5 or higher. SDP shall complete the corrective actions identified in the CAP within twelve (12) months of Date of Entry. The final CAP and certification of completion of corrective actions of each item in the final CAP shall be included in the first semi-annual report that is due no sooner than twelve months after the Date of Entry.

Status: *A third-party contractor, ENRUD, has conducted a comparative monitoring review of each component type in the most current LDAR database for the ACU and BEU units. Comparative monitoring leak ratio and leak percentage were calculated. A preliminary report has been provided to SDP. SDP has evaluated and implemented the recommendations from the CAP as of December 2014.*

Requirement:
Upgrade BEU Pumps
By no later than two (2) years after the Date of Entry, SDP shall upgrade two BEU pumps (DP-2206 and DP-2207) with a dual mechanical seal that meets the requirements of 40 CFR 63.163(e)(1-3).

Status: *Dual mechanical seal installations are complete for DP-2206 and DP-2207 by January 31, 2015.*

Requirement:
Infrared Imaging of ACU and BEU Equipment
By no later than one month after Date of Entry, SDP shall commence an Infrared Gas-Imagining Program for the ACU and BEU equipment that contains VOCs > 5%, using Method 21:

a) Pumps – every two weeks
b) Atmospheric PRVs- every two weeks
c) Valves – once a month
d) Connectors – once a quarter

Components that exceed regulatory requirements will be repaired consistent with existing regulations.

Status: *SDP has commenced an Infrared Gas-Imaging Program of the ACU and BEU units. Results of the imaging are provided in Attachment VII: Imaging Results for ACU/BEU equipment. Leak definitions are determined by existing regulations. Leaking components and repair results are captured in the SDP LDAR database.*

Consent Decree Semi-Annual Compliance Report
Section VIII: Supplemental Projects
L. Fence Line Open Path Monitoring SEP (Appendix 2.9)

Report Date: *January 29, 2022*

Requirement: (para 76)
SDP shall install and operate an open path air monitor to measure and record benzene concentrations in the ambient air on the southeast fenceline of the facility. Field investigation is required as response to screening conditions levels being attained. The response plan shall be submitted to the EPA for review and approval.

Status: *A response plan was submitted to the EPA on October 6, 2014. Comments on the plan were received from the EPA on October 18, 2014. Shell Deer Park provided responses to the comments on January 13, 2015. EPA approval of the plan occurred on February 23, 2015. Shell Deer Park began the acquisition and installation of the monitor and meteorological station according to the agreed schedule. The open-path air monitor reached operational status as on May 2, 2016 as detailed in Shell's letter to EPA dated May 4, 2016. Since that time, SDP relevant data is being posted to a public website on a weekly basis, and non-SDP relevant data is being submitted weekly to the designated EPA recipients according to the provisions of the SEP. Per the Paragraph 81, item c requirement, the itemized project costs are included as a confidential attachment (Attachment XI) to this submittal. In accordance with the requirements included in Paragraph 81, item d, this semiannual submittal cover letter certification also certifies completion of this SEP project, consistent with the October 2018 FAMS Final Report submittal.*

Consent Decree Semi-Annual Compliance Report
Section VIII Supplemental Projects
M. Diesel Retrofit SEP (Appendix 2.10)

Report Date: *January 29, 2022*

Requirement: (para 77)
Diesel Retrofit
SDP shall implement a SEP designed to reduce diesel emissions from school buses and/or non-school bus publicly owned vehicles by no later than 24 months after the Date of Entry (June 6, 2016).

Status: *SDP provided funding to the Houston Galveston Area Council ("HGAC") to implement the diesel retrofit SEP program on April 22, 2015. Funds were made available to the public on June 10, 2015. On March 18, 2016, EPA approved a revision of the SEP to allow inclusion of bus replacements in lieu of retrofits (see Attachment 1). On May 25, 2016, HGAC released SEP funds totaling $200,000 to the Humble Independent School District and the Friendswood Independent School District for the purchase of new school buses to replace existing higher-emitting vehicles in their fleets (see Attachments2 and 3). These attachments contain the information required by paragraph 81 of this Consent Decree. Shell certifies under penalty of law that, based on a reasonable inquiry and review of documents provided by HGAC and Shell records of payments, this SEP has been fully implemented pursuant to the provisions of this Decree as revised by US Environmental Protection Agency agreement to permit SEP funding to pay for diesel replacement buses. For further information, please see semi-annual report submitted July 31, 2016.*

Attachment I – Instrument/Analyzer Downtime

Coker Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	**Parameter Monitored** per paragraphs 18-20 and 22-24	**3rd Quarter** *July 1 - September 30* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]**	**4th Quarter 2021** *October 1 - December 31* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]**
Gas Chromatograph	Gas Speciation	12	0.54%	0	0.00%
Calorimeter	Net Heating Value & Molecular Wt.	0	0.00%	0	0.00%
Vent Gas Flow	Total Flow [volumetric & mass flow]	0	0.00%	0	0.00%
Vent Gas Pressure	Pressure	0	0.00%	0	0.00%
Vent Gas Temperature	Temperature	0	0.00%	0	0.00%
Total Steam Flow	Total Flow [volumetric & mass flow]	2	0.09%	2	0.09%
Steam Pressure	Pressure	0	0.00%	0	0.00%
Steam Temperature	Temperature	0	0.00%	0	0.00%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	**Start Date & Time**	**End Date & Time**	**Duration of Downtime**	**Cause of Downtime**	**Corrective Actions**
-	-	-	-	-	-

East Property Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	**Parameter Monitored** per paragraphs 18-20 and 22-24	**3rd Quarter 2021** *July 1 - September 30* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]**	**4th Quarter 2021** *October 1 - December 31* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Down time [%]**
Gas Chromatograph	Gas Speciation	22	1.00%	52	2.36%
Calorimeter	Net Heating Value & Molecular Wt.	7	0.32%	6	0.27%
Vent Gas Flow	Total Flow [volumetric & mass flow]	32	1.45%	65	2.94%
Vent Gas Pressure	Pressure	7	0.32%	2	0.09%
Vent Gas Temperature	Temperature	7	0.32%	2	0.09%
Total Steam Flow	Total Flow [volumetric & mass flow]	7	0.32%	0	0.00%

Steam Pressure	Pressure	7	0.32%	0	0.00%
Steam Temperature	Temperature	0	0.00%	0	0.00%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	Start Date & Time	End Date & Time	Duration of Downtime	Cause of Downtime	Corrective Actions
-	-	-	-	-	-

Girbotol Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	**Parameter Monitored** per paragraphs 18-20 and 22-24	**3rd Quarter 2021** *July 1 - September 30* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]**	**4th Quarter 2021** *October 1 - December 31* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Down time [%]**
Gas Chromatograph	Gas Speciation	30	1.36%	0	0.00%
Calorimeter	Net Heating Value & Molecular Wt.	0	0.00%	5	0.23%
Vent Gas Flow	Total Flow [volumetric & mass flow]	2	0.09%	0	0.00%
Vent Gas Pressure	Pressure	0	0.00%	0	0.00%
Vent Gas Temperature	Temperature	0	0.00%	0	0.00%
Total Steam Flow	Total Flow [volumetric & mass flow]	0	0.00%	0	0.00%
Steam Pressure	Pressure	0	0.00%	0	0.00%
Steam Temperature	Temperature	0	0.00%	0	0.00%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	Start Date & Time	End Date & Time	Duration of Downtime	Cause of Downtime	Corrective Actions
-	-	-	-	-	-

HIPA Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	**Parameter Monitored** per paragraphs 18-20 and 22-24	**3rd Quarter 2021** *July 1 - September 30* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]**	**4th Quarter 2021** *October 1 - December 31* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Down time [%]**
Gas Chromatograph	Gas Speciation	4	0.18%	14	0.63%
Calorimeter	Net Heating Value & Molecular Wt.	14	0.63%	0	0.00%
Vent Gas Flow	Total Flow [volumetric & mass flow]	7	0.32%	0	0.00%
Vent Gas Pressure	Pressure	0	0.00%	0	0.00%
Vent Gas Temperature	Temperature	1	0.05%	0	0.00%
Total Steam Flow	Total Flow [volumetric & mass flow]	0	0.00%	0	0.00%
Steam Pressure	Pressure	0	0.00%	0	0.00%
Steam Temperature	Temperature	0	0.00%	0	0.00%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	**Start Date & Time**	**End Date & Time**	**Duration of Downtime**	**Cause of Downtime**	**Corrective Actions**
-	-	-	-	-	-

North Property Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	**Parameter Monitored** per paragraphs 18-20 and 22-24	**3rd Quarter 2021** *July 1 - September 30* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]**	**4th Quarter 2021** *October 1 - December 31* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Down time [%]**
Gas Chromatograph	Gas Speciation	8	0.36%	15	0.68%
Calorimeter	Net Heating Value & Molecular Wt.	2	0.09%	0	0.00%
Vent Gas Flow	Total Flow [volumetric & mass flow]	0	0.00%	0	0.00%
Vent Gas Pressure	Pressure	0	0.00%	0	0.00%

Vent Gas Temperature	Temperature	0	0.00%	0	0.00%
Total Steam Flow	Total Flow [volumetric & mass flow]	0	0.00%	0	0.00%
Steam Pressure	Pressure	0	0.00%	0	0.00%
Steam Temperature	Temperature	0	0.00%	0	0.00%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	Start Date & Time	End Date & Time	Duration of Downtime	Cause of Downtime	Corrective Actions
-	-	-	-	-	-

Olefins Ground Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	Parameter Monitored per paragraphs 18-20 and 22-24	3rd Quarter 2021 *July 1 - September 30*		4th Quarter 2021 *October 1 - December 31*	
		Hours in period 2208		Hours in period 2208	
		Applicable Hours 2208		Applicable Hours 2208	
		Downtime [hrs]	**Downtime [%]**	**Downtime [hrs]**	**Down time [%]**
Gas Chromatograph	Gas Speciation	52	2.36%	5	0.23%
Calorimeter	Net Heating Value & Molecular Wt.	57	2.58%	44	1.99%
Vent Gas Flow	Total Flow [volumetric & mass flow]	58	2.63%	12	0.54%
Vent Gas Pressure	Pressure	4	0.18%	1	0.05%
Vent Gas Temperature	Temperature	4	0.18%	1	0.05%
Total Steam Flow	Total Flow [volumetric & mass flow]	6	0.27%	1	0.05%
Steam Pressure	Pressure	4	0.18%	1	0.05%
Steam Temperature	Temperature	4	0.18%	1	0.05%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	Start Date & Time	End Date & Time	Duration of Downtime	Cause of Downtime	Corrective Actions
-	-	-	-	-	-

OP2 Elevated Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	Parameter Monitored per paragraphs 18-20 and 22-24	3rd Quarter 2021 *July 1 - September 30*	4th Quarter 2021 *October 1 - December 31*

		Hours in period Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]** 2208	Hours in period Applicable Hours 2208 **Downtime [hrs]**	**Down time [%]** 2208
Gas Chromatograph	Gas Speciation	50	2.26%	10	0.45%
Calorimeter	Net Heating Value & Molecular Wt.	4	0.18%	44	1.99%
Vent Gas Flow	Total Flow [volumetric & mass flow]	64	2.90%	17	0.77%
Vent Gas Pressure	Pressure	4	0.18%	1	0.05%
Vent Gas Temperature	Temperature	5	0.23%	1	0.05%
Total Steam Flow	Total Flow [volumetric & mass flow]	18	0.82%	1	0.05%
Steam Pressure	Pressure	4	0.18%	1	0.05%
Steam Temperature	Temperature	4	0.18%	1	0.05%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	Start Date & Time	End Date & Time	Duration of Downtime	Cause of Downtime	Corrective Actions
-	-	-	-	-	-

OP3 Elevated Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	**Parameter Monitored** per paragraphs 18-20 and 22-24	**3rd Quarter 2021** *July 1 - September 30* Hours in period Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]** 2208	**4th Quarter 2021** *October 1 - December 31* Hours in period Applicable Hours 2208 **Downtime [hrs]**	**Down time [%]** 2208
Gas Chromatograph	Gas Speciation	20	0.91%	7	0.32%
Calorimeter	Net Heating Value & Molecular Wt.	4	0.18%	1	0.05%
Vent Gas Flow	Total Flow [volumetric & mass flow]	13	0.59%	18	0.82%
Vent Gas Pressure	Pressure	4	0.18%	1	0.05%
Vent Gas Temperature	Temperature	4	0.18%	1	0.05%
Total Steam Flow	Total Flow [volumetric & mass flow]	4	0.18%	1	0.05%
Steam Pressure	Pressure	4	0.18%	1	0.05%
Steam Temperature	Temperature	4	0.18%	1	0.05%

Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	Start Date & Time	End Date & Time	Duration of Downtime	Cause of Downtime	Corrective Actions
-	-	-	-	-	-

West Property Flare - Instrument downtime per paragraph 86.a. and 86.b.

Instrument & Monitoring Systems	**Parameter Monitored** per paragraphs 18-20 and 22-24	**3rd Quarter 2021** *July 1 - September 30* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Downtime [%]**	**4th Quarter 2021** *October 1 - December 31* Hours in period 2208 Applicable Hours 2208 **Downtime [hrs]**	**Down time [%]**
Gas Chromatograph	Gas Speciation	13	0.59%	0	0.00%
Calorimeter	Net Heating Value & Molecular Wt.	0	0.00%	37	1.68%
Vent Gas Flow	Total Flow [volumetric & mass flow]	4	0.18%	7	0.32%
Vent Gas Pressure	Pressure	0	0.00%	0	0.00%
Vent Gas Temperature	Temperature	0	0.00%	0	0.00%
Total Steam Flow	Total Flow [volumetric & mass flow]	2	0.09%	0	0.00%
Steam Pressure	Pressure	0	0.00%	0	0.00%
Steam Temperature	Temperature	0	0.00%	0	0.00%
Digital Video Camera	Video	0	0.00%	0	0.00%

Information if an instrument exceeded 110 hours or 5% operating time per quarter

Instrument	Start Date & Time	End Date & Time	Duration of Downtime	Cause of Downtime	Corrective Actions
-	-	-	-	-	-

Attachment II – ACS Override

Flare: Girbotol Flare
Reporting period dates: July 1, 2021 – September 30, 2021 Hours of Applicability: 2208 hours
Parameter Monitored: (Steam & Supplemental Gas Automatic Control System)
Automatic Control System Override Limitation: 110 hours/quarter

Override of Steam ACS Summary Data[1]	Override of Supplemental Gas ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to: a. Stop Smoking ..... 0.00 b. Meet Net Heating Value..... 0.00 c. Prevent Flame Extinguishment ..... 0.00 d. Protect Personnel Safety ..... 0.00 e. Protect Process Safety ..... 0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 0.98 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override ..... 0.98 3. Duration of ACS override percentage .....0.04% Hours of Applicability	1. Duration of ACS Override in reporting period due to: a. Stop Smoking.....0.00 b. Meet Net Heating Value .....0.00 c. Prevent Flame Extinguishment.....0.00 d. Protect Personnel Safety .....0.00 e. Protect Process Safety.....0.00 f. Stop Discontinuous Wake Dominated Flow .....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 0.20 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override.....0.20 3. Duration of ACS override percentage ..... 0.01% Hours of Applicability

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Flare: Girbotol Flare
Reporting period dates: October 1, 2021 – December 31, 2021 Hours of Applicability: 2208 hours
Parameter Monitored: (Steam & Supplemental Gas Automatic Control System)
Automatic Control System Override Limitation: 110 hours/quarter

Override of Steam ACS Summary Data[1]	Override of Supplemental Gas ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to: a. Stop Smoking ..... 0.00 b. Meet Net Heating Value..... 0.00 c. Prevent Flame Extinguishment ..... 0.00 d. Protect Personnel Safety ..... 0.00 e. Protect Process Safety ..... 0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 0.33 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override ..... 0.33 3. Duration of ACS override percentage 0.02%	1. Duration of ACS Override in reporting period due to: a. Stop Smoking.....0.00 b. Meet Net Heating Value .....0.00 c. Prevent Flame Extinguishment.....0.00 d. Protect Personnel Safety .....0.00 e. Protect Process Safety.....0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances ....0.00 h. Other known causes .....0.2 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override.....0.2 3. Duration of ACS override percentage 0.01%

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Flare: HIPA Flare
Reporting period dates: July 1, 2021 – September 30, 2021 Hours of Applicability: 2208 hours
Parameter Monitored: (Steam & Supplemental Gas Automatic Control System)
Automatic Control System Override Limitation: 110 hours/quarter

Override of Steam ACS Summary Data[1]	Override of Supplemental Gas ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to: a. Stop Smoking ..... 0.00 b. Meet Net Heating Value..... 0.00 c. Prevent Flame Extinguishment ..... 0.00 d. Protect Personnel Safety ..... 0.00 e. Protect Process Safety ..... 0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 3.13 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override ..... 3.13 3. Duration of ACS override percentage 0.14%	1. Duration of ACS Override in reporting period due to: a. Stop Smoking .....0.00 b. Meet Net Heating Value .....0.00 c. Prevent Flame Extinguishment .....0.00 d. Protect Personnel Safety .....0.00 e. Protect Process Safety .....0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 1.15 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override .....1.15 3. Duration of ACS override percentage 0.05%

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Flare: HIPA Flare
Reporting period dates: October 1, 2021 – December 31, 2021 Hours of Applicability: 2208 hours
Parameter Monitored: (Steam & Supplemental Gas Automatic Control System)
Automatic Control System Override Limitation: 110 hours/quarter

Override of Steam ACS Summary Data[1]	Override of Supplemental Gas ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to: a. Stop Smoking ..... 0.00 b. Meet Net Heating Value..... 0.00 c. Prevent Flame Extinguishment ..... 0.00 d. Protect Personnel Safety ..... 0.00 e. Protect Process Safety ..... 0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes .....3.88 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override ..... 3.88 3. Duration of ACS override percentage 0.18%	1. Duration of ACS Override in reporting period due to: a. Stop Smoking .....0.00 b. Meet Net Heating Value .....0.00 c. Prevent Flame Extinguishment .....0.00 d. Protect Personnel Safety .....0.00 e. Protect Process Safety .....0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 1.30 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override .....1.30 3. Duration of ACS override percentage 0.06%

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Flare: Olefins II Flare
Reporting period dates: July 1, 2021 – September 30, 2021 Hours of Applicability: 2208 hours
Parameter Monitored: (Steam & Supplemental Gas Automatic Control System)
Automatic Control System Override Limitation: 110 hours/quarter

Override of Steam ACS Summary Data[1]	Override of Supplemental Gas ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to: a. Stop Smoking ..... 0.00 b. Meet Net Heating Value..... 0.00 c. Prevent Flame Extinguishment ..... 0.00 d. Protect Personnel Safety ..... 0.00 e. Protect Process Safety ..... 0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 13.53 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override ..... 13.53 3. Duration of ACS override percentage 0.61%	1. Duration of ACS Override in reporting period due to: a. Stop Smoking.....0.00 b. Meet Net Heating Value .....0.00 c. Prevent Flame Extinguishment.....0.00 d. Protect Personnel Safety .....0.00 e. Protect Process Safety.....0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 0.00 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override.....0.00 3. Duration of ACS override percentage 0.00%

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Flare: Olefins II Flare
Reporting period dates: October 1, 2021 – December 31, 2021 Hours of Applicability: 2208 hours
Parameter Monitored: (Steam & Supplemental Gas Automatic Control System)
Automatic Control System Override Limitation: 110 hours/quarter

Override of Steam ACS Summary Data[1]	Override of Supplemental Gas ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to: a. Stop Smoking ..... 0.00 b. Meet Net Heating Value..... 0.00 c. Prevent Flame Extinguishment ..... 0.00 d. Protect Personnel Safety ..... 0.00 e. Protect Process Safety ..... 0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 12.93 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override ..... 12.93 3. Duration of ACS override percentage 0.59%	1. Duration of ACS Override in reporting period due to: a. Stop Smoking.....0.00 b. Meet Net Heating Value .....0.00 c. Prevent Flame Extinguishment.....0.00 d. Protect Personnel Safety .....0.00 e. Protect Process Safety.....0.00 f. Stop Discontinuous Wake Dominated Flow.....0.00 g. Stop Acoustic Disturbances .....0.00 h. Other known causes ..... 0.00 i. Instrument Downtime .....0.00 j. Startup, Shutdown or Malfunction .....0.00 2. Total duration of ACS override.....0.00 3. Duration of ACS override percentage 0.00%

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Flare: Olefins III Flare

Reporting period dates: July 1, 2021 – September 30, 2021
Parameter Monitored: Steam Automatic Control System
Monitoring Downtime Limitation: 110 hours/quarter
Hours of Applicability: 2208 hours

Override of Steam ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to:
a. Stop Smoking 0.00
b. Meet Net Heating Value..... 0.00
c. Prevent Flame Extinguishment 0.00
d. Protect Personnel Safety 0.00
e. Protect Process Safety 0.00
f. Stop Discontinuous Wake Dominated Flow.....0.00
g. Stop Acoustic Disturbances 0.00
h. Other known causes 13.34
i. Instrument Downtime 0.00
j. Startup, Shutdown or Malfunction 0.00
2. Total duration of ACS override 13.34
3. Duration of ACS override percentage 0.60%

Reporting period dates: October 1, 2021 – December 31, 2021
Parameter Monitored: Steam Automatic Control System
Monitoring Downtime Limitation: 110 hours/quarter
Hours of Applicability: 2208 hours

Override of Steam ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to:
a. Stop Smoking.....0.00
b. Meet Net Heating Value 0.00
c. Prevent Flame Extinguishment.....0.00
d. Protect Personnel Safety 0.00
e. Protect Process Safety.....0.00
f. Stop Discontinuous Wake Dominated Flow.....0.00
g. Stop Acoustic Disturbances 0.00
h. Other known causes 7.40
i. Instrument Downtime 0.00
j. Startup, Shutdown or Malfunction 0.00
2. Total duration of ACS override.....7.40
3. Duration of ACS override percentage 0.34%

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Flare: Olefins Ground Flare

Reporting period dates: July 1, 2021 – September 30, 2021
Parameter Monitored: Steam Automatic Control System
Monitoring Downtime Limitation: 110 hours/quarter
Hours of Applicability: 2208 hours

Override of Steam ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to:
a. Stop Smoking 0.00
b. Meet Net Heating Value..... 0.00
c. Prevent Flame Extinguishment 0.00
d. Protect Personnel Safety 0.00
e. Protect Process Safety 0.00
f. Stop Discontinuous Wake Dominated Flow.....0.00
g. Stop Acoustic Disturbances 0.00
h. Other known causes 9.02
i. Instrument Downtime 0.00
j. Startup, Shutdown or Malfunction 0.00
2. Total duration of ACS override 9.02
3. Duration of ACS override percentage 0.41%

Reporting period dates: October 1, 2021 – December 31, 2021
Parameter Monitored: Steam Automatic Control System
Monitoring Downtime Limitation: 110 hours/quarter
Hours of Applicability: 2208 hours

Override of Steam ACS Summary Data[1]
1. Duration of ACS Override in reporting period due to:
a. Stop Smoking.....0.00
b. Meet Net Heating Value 0.00
c. Prevent Flame Extinguishment.....0.00
d. Protect Personnel Safety 0.00
e. Protect Process Safety.....0.00
f. Stop Discontinuous Wake Dominated Flow.....0.00
g. Stop Acoustic Disturbances 0.00
h. Other known causes 0.33
i. Instrument Downtime 0.00
j. Startup, Shutdown or Malfunction 0.00
2. Total duration of ACS override.....0.33
3. Duration of ACS override percentage 0.01%

[1] If ACS override hours exceeded 110 hrs per calendar quarter, the cause and corrective actions (if due other causes) are provided below

Start Date	Start Time	End Date	End Time	Duration Hours	Reason for ACS Override	Corrective Action Taken

Attachment III – Flare Combustion Efficiency Parameters

Efficiency Parameter	Flare	Start	End	Corrective Action
Pilot Indication	WPF	12/20/21 6:20	12/20/21 12:35	Power was restored and monitoring continued

Attachment IV – NHVvg /NHVcz

Flare: Coker Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Hours of Applicability: 2208 hours
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.0 hours; 0.0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0.00 hours; 0.00 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) 0.00%	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00%

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Coker Property Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Parameter Monitored: Net Heating Value – Vent Gas & combustion Zone –
Hours of Applicability: 2208 hours
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.0 hours; 0.0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0.0 hours; 0.0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) 0.00%	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00%

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: West Property Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.0 hours; 0.0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0.00 hours; 0.00 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00%[2]	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... .0.00 3. Total Duration of Exceedance x 100 ..... 0.00%

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: West Property Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas & combustion Zone –
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.0 hours; 0.0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0.00 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.0% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: North Property Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.00 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0.00 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: North Property Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas & Combustion Zone –
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.00 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: East Property Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.00 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.0% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicbility

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: East Property Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas & Combustion Zone –
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.00 hours; 0.00 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0.00 hours; 0.00 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Girbotol Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0.00 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Girbotol Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas & combustion Zone –
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: HIPA Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: ____0____hours;___0__%;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: ____0.00____hours;___0.00__%;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions.....0.00 b. Quality assurance calibration.....0.00 c. Other known causes.....0.00 d. Unknown causes.....0.00 2. Total duration of exceedance.....0.00 3. Total duration of Exceedance x (100).....0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions.....0.00 b. Quality assurance calibration.....0.00 c. Other known causes.....0.00 d. Unknown causes.....0.00 2. Total duration of exceedance.....0.00 3. Total Duration of Exceedance x 100.....0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: HIPA Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas & combustion Zone –
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: ____0____hours; ___0__%;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: _____0_hours; __0___%;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions.....0.00 b. Quality assurance calibration.....0.00 c. Other known causes.....0.00 d. Unknown causes.....0.00 2. Total duration of exceedance.....0.00 3. Total duration of Exceedance x (100).....0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions.....0.00 b. Quality assurance calibration.....0.00 c. Other known causes.....0.00 d. Unknown causes.....0.00 2. Total duration of exceedance.....0.00 3. Total Duration of Exceedance x 100.....0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Olefins II Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz
limit Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Olefins II Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas & combustion Zone –
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 4.50 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 4.50 3. Total Duration of Exceedance x 100 ..... 0.01% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Olefins III Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... .0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Olefins III Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;
Emission Standard Limitation : NHVcz > NHVcz limit
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Olefins Ground Flare
Reporting period dates: July 1, 2021 – September 30, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;
Emission Standard Limitation : NHVcz > 500 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.0% Hours of Applicability Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.0% Hours of Applicability

4Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Flare: Olefins Ground Flare
Reporting period dates: October 1, 2021 – December 31, 2021
Hours of Applicability: 2208 hours
Parameter Monitored: Net Heating Value – Vent Gas (vg) & Combustion Zone (cz)
Emission Standard Limitation: NHVvg – 300 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;
Emission Standard Limitation : NHVcz > 500 BTU/scf
Inapplicability of Emissions Standards: 0 hours; 0 %;

Exceedance of NHVvg	Exceedance of NHVcz
1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total duration of Exceedance x (100) ..... 0.00% Hours of Applicability	1. Duration of Emission Standard Exceedance in reporting period due to: a. Monitor equipment malfunctions ..... 0.00 b. Quality assurance calibration ..... 0.00 c. Other known causes ..... 0.00 d. Unknown causes ..... 0.00 2. Total duration of exceedance ..... 0.00 3. Total Duration of Exceedance x 100 ..... 0.00% Hours of Applicability

Start Date	Start Time	End Date	End Time	Duration Hours	Cause of Emission Standard Exceedance	Corrective Action Taken

Attachment V – ACU/BEU Tanks

Tanks in ACU/BEU Service

1/29/2022

Tank No.	Service	Comment
D370	Benzene Service	App.2.7
D380	Benzene Service	App.2.7
D381	Benzene Service	App. 2.7
D371	NA	Removed – 7/1/2014 letter
L306	NA	Removed – 7/1/2014 letter
D351	Benzene/Toluene Service	App. 2.7
D352	Benzene/Toluene Service	App. 2.7
J313	Benzene-Containing Service	App.2.7
D353	Benzene-Containing Service	App. 2.7
D377	Reformate	App. 2.7
D379	Reformate	App.2.7
J312	NA	Removed – 7/1/2014 Letter
J314	Benzene-Containing Service	App. 2.7
D350	NA	Removed 7/1/2014 letter
L305	NA	Removed 7/1/2014
F361	Benzene-/Toluene Service	Added – 7/1/2014 letter
F359	Benzene/Toluene Service	Added – 7/1/2014 letter

Attachment VI – Infrared Camera Specifications

FLIR GF320 14.5° Fixed lens

P/N: 44402-0101

General description

The new FLIR GF320 is a revolutionary infrared camera capable of finding Methane emissions or other Volatile Organic Compounds (VOC). It is unbeatable for detecting even the smallest gas leaks. The FLIR GF 320 offers a completely unique method of tracing leaks to their source by visualizing this in an image.

Key features:

- Real time visualization of gas leaks
- Measures temperatures from -40 °C to +350 °C with high accuracy
- Internal data/video storage
- High Sensitivity Mode – detects even very small amount of gas leaks
- Digital camera & GPS
- Radiometric with ±1 °C accuracy
- High performance LCD & Tiltable high resolution viewfinder
- Lightweight (2.4 kg) and robust design
- Multi-angle handle with integrated direct access buttons

FLIR GF320 can scan large areas rapidly and pinpoint leaks in real time. It is ideal for monitoring plants that it is difficult to reach with contact measurement tools. Literally thousands of components can be scanned per shift without the need to interrupt the process. It reduces repair downtime and provides verification of the process. And above all it is exceptionally safe, allowing potentially dangerous leaks to be monitored from several meters away. FLIR GF320 will significantly improve your work safety, environmental and regulatory compliance, not to mention helping to improve the bottom line by finding leaks that essentially decrease profits.

Detects the following gases:
Benzene, Ethanol, Ethylbenzene, Heptane, Hexane, Isoprene, Methanol, MEK, MIBK, Octane, Pentane, 1-Pentene, Toluene, Xylene, Butane, Ethane, Methane, Propane, Ethylene, Propylene

Imaging and optical data	
Field of view (FOV)	14.5° x 10.8°
Minimum focus distance	0.5 m (1.64 ft.)
Focal length	38 mm (1.49 in.)
Lens identification	Automatic
F-number	1.5
Thermal sensitivity/NETD	<25 mK @ +30°C (+86°F)
Focus	Automatic (one touch) or manual (electric or on the lens)
Zoom	1–8x continuous, digital zoom
Digital image enhancement	Noise reduction filter, High Sensitivity Mode (HSM)

Detector data	
Detector type	Focal Plane Array (FPA), cooled InSb
Spectral range	3.2–3.4 µm
IR resolution	320 x 240 pixels
Sensor cooling	Stirling Microcooler (FLIR MC-3)
Detects following gases	Benzene, Ethanol, Ethylbenzene, Heptane, Hexane, Isoprene, Methanol, MEK, MIBK, Octane, Pentane, 1-Pentene, Toluene, Xylene, Butane, Ethane, Methane, Propane, Ethylene, Propylene

Electronics and data rate	
Full frame rate	60 Hz

Image presentation	
Display	Built-in widescreen, 4.3 in. LCD, 800 x 480 pixels
Viewfinder	Built-in, tiltable OLED, 800 x 480 pixels
Automatic image adjustment	Continuous/manual; linear or histogram based
Manual image adjustment	Level/span
Image modes	IR-image, visual image, High Sensitivity Mode (HSM)

Measurement	
Temperature range	–40°C to +350°C (–40°F to +662°F)
Accuracy	±1°C (±1.8°F) for temperature range (0°C, to +100°C, +32°F to +212°F) or ±2% of reading for temperature range (>+100°C, >+212°F)

Measurement analysis	
Spotmeter	10
Area	5 boxes with max./min./average
Profile	1 live line (horizontal or vertical)
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set or captured from any measurement function
Emissivity correction	Variable from 0.01 to 1.0 or selected from editable materials list
Reflected apparent temperature correction	Automatic, based on input of reflected temperature
Measurement corrections	Reflected temperature, distance, atmospheric transmission, humidity, external optics

Set-up	
Menu commands	Level, span Auto adjust continuous/manual/semi-automatic Zoom Palette Start/stop recording Store image Playback/recall image
Set-up commands	1 programmable button, local adaptation of units, language, date and time formats

Storage of images	
Image storage type	Removable SD or SDHC memory card , two card slots
Image storage capacity	> 1200 images (JPEG) with post process capability per GB on memory card
Image storage mode	IR/visual images Visual image can automatically be associated with corresponding IR image
Periodic image storage	Every 10 seconds up to 24 hours
File formats	Standard JPEG, 14 bit measurement data included
GPS	Location data automatically added to every image from built-in GPS

Video recording and streaming	
Non-radiometric IR-video recording	MPEG4/H.264 (up to 60 minutes/clip) to memory card. Visual image can automatically be associated with corresponding recording of non-radiometric IR-video.
Non-radiometric IR-video streaming	RTP/H.264

Digital camera	
Built-in digital camera	3.2 Mpixel, auto focus, and two video lamps
Digital camera video recording	MPEG4/H.264 (25 minutes/clip) to memory card

Laser pointer	
Laser	Activated by dedicated button

FLIR

www.flir.com/thg

44402-0101_en_41.mnl

Laser pointer	
Laser classification	Class 2
Laser type	Semiconductor AlGaInP diode laser, 1 mW, 635 nm (red)

Data communication interfaces	
USB	• USB-A: Connect external USB device (e.g. memory stick) • USB Mini-B: Data transfer to and from PC
USB, standard	USB Mini-B: 2.0 High Speed
Video out	Digital Video Output (image)

Power system	
Battery type	Rechargeable Li Ion battery
Battery voltage	7.2 V
Battery capacity	4.4 Ah
Battery operating time	> 3 hours at 25°C (+68°F) and typical use
Charging system	In camera (AC adapter or 12 V from a vehicle) or 2-bay charger
Charging time	2.5 h to 95% capacity, charging status indicated by LED's
External power operation	AC adapter 90–260 VAC, 50/60 Hz or 12 V from a vehicle (cable with standard plug, optional)
DC operation	10.8 to 16V DC, Polarity protected (proprietary protected)
Power	8.5 W typically
Start-up time	Typically 7 min. @ 25°C (+77°F)

Environmental data	
Operating temperature range	–20°C to +50°C (–4°F to +122°F)
Storage temperature range	–30°C to +60°C (–22°F to +140°F)
Humidity (operating and storage)	IEC 68-2-30/24 h 95% relative humidity +25°C to +40°C (+77°F to +104°F) (2 cycl)
Directives	• 73/23EEC • 2004/108/EC • 2002/95/EC • 2002/96/EC
EMC	• EN61000-6-4 (Emission) • EN61000-6-2 (Immunity) • FCC 47 CFR Part 15 class A (Emission) • EN 61 000-4-8, L5
Encapsulation	IP 54 (IEC 60529)
Bump	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)
Safety	Power supply: EN/UL/IEC 60950-1

Physical data	
Camera weight, excl. lens and battery	1.94 kg (4.27 lb.)
Camera weight, incl. lens and excl. battery	2.24 kg (4.94 lb.)
Camera weight, incl. lens and battery	2.48 kg (5.47 lb.)
Battery weight	0.24 kg (0.52 lb.)
Camera size, excl. lens (L x W x H)	284 x 169 x 161 mm (11.2 x 6.7 x 6.3 in.)
Cameras size, incl. lens (L x W x H)	305 x 169 x 161 mm (12.0 x 6.7 x 6.3 in.)
Battery size (L x W x H)	141 x 47 x 28 mm (5.5 x 1.8 x 1.1 in.)
Battery charger size (L x W x H)	158 x 122 x 25 mm (6.2 x 4.8 x 1.0 in.)
Tripod mounting	UNC ¼"-20
Housing material	Aluminium, Magnesium
Grip material	TPE Thermoplastic Elastomers

Scope of delivery

- Hard transport case
- Infrared camera with lens
- Battery charger
- Battery, 2 ea.
- Calibration certificate
- FLIR QuickReport™ PC software CD-ROM
- FLIR VideoReport™ PC software CD-ROM
- HDMI-DVI cable
- HDMI-HDMI cable
- Lens cap (mounted on lens)
- Memory card
- Memory card adapter
- Power supply, incl. multi-plugs
- Printed Getting Started Guide
- Printed Important Information Guide
- Shoulder strap
- USB cable
- User documentation CD-ROM

Optional Accessories

- 1196209 Battery
- T197692 Battery charger, incl. power supply with multi plugs
- T910814 Power supply, incl. multi plugs
- 1910475 Adapter, SD memory card to USB
- T910737 Memory card micro-SD with adapters
- 1910423 USB cable Std A <-> Mini-B, 2 m/6.6 ft.
- 1910490 Cigarette lighter adapter kit, 12 VDC, 1.2 m/3.9 ft.
- T910816 HDMI to DVI cable 1.5 m
- T910815 HDMI to HDMI cable 1.5 m
- T197555 Hard transport case for FLIR GF3XX-Series

Optional Software

- T197556 FLIR VideoReport
- T197717 FLIR Reporter 8.5 SP2, Professional
- T197717L5 FLIR Reporter 8.5 SP2, Professional, 5 user licenses
- T197717L10 FLIR Reporter 8.5 SP2, Professional, 10 user licenses

FLIR®

www.flir.com/thg

44402-0101_en_41.indd

Optional Accessories

1196209; Battery

General description
High capacity battery for the IR camera.

Technical data	
Battery type	Rechargeable Li Ion battery
Battery voltage	7.2 V
Battery capacity	4.4 Ah
Battery note	Approximate lithium content: 3.0 g
Charging system	In camera (AC adapter or 12 V from a vehicle) or 2-bay charger
Charging time	2.5 h to 95% capacity, charging status indicated by LED's
Battery weight	0.24 kg (0.52 lb.)
Size (L x W x H)	141 x 47 x 28 mm (5.5 x 1.8 x 1.1 in.)

v1.01

T197692; Battery charger, incl. power supply with multi plugs

General description
Stand-alone 2-bay battery charger, including power supply with multi plugs.
Note: This product replaces T197563 and 1196210EU/UK/US

Technical data	
AC operation	100–240 VAC, 50/60 Hz, 12 VDC out
Power	3000 mA at 12 VDC
Battery charger size (L x W x H)	158 x 122 x 25 mm (6.2 x 4.8 x 1.0 in.)
Cable length	1.98 m (6.5 ft.)

Scope of delivery
• Stand-alone 2-bay battery charger • Power supply including cable • EU plug • UK plug • US plug • AU plug

v1.02

T910814; Power supply, incl. multi plugs

General description
Combined power supply, including multiple plugs, and battery charger to charge the battery when it is inside or outside of the camera.

Technical data	
AC operation	100–240 VAC, 50/60 Hz, 12 VDC out
Power	3000 mA at 12 VDC
Cable length	1.98 m (6.5 ft.)

Scope of delivery
• Power supply including cable • EU plug • UK plug • US plug • AU plug

v1.02

1910475; Adapter, SD memory card to USB

General description
Adapter, SD memory card to USB.
Easy to install and use; no additional driver installation required for Windows ME, 2000 and XP. Driver included for Windows 98SE.

Technical data	
Weight	16 g (0.56 oz.)
Size (L x W x H)	74 x 26 x 11 mm (2.9 x 1.0 x 0.4 in.)

v1.01

T910737; Memory card micro-SD with adapters

General description
Micro-SD Card for data storage (e.g. images)

Technical data	
Memory card, size	2 GB

FLIR

www.flir.com/thg

Scope of delivery
• micro-SD • Adapter to miniSD Card • Adapter from miniSD Card to SD memory card

v1.02

1910423; USB cable Std A <-> Mini-B, 2 m/6.6 ft.

General description
This cable is used to connect the infrared camera with a computer, using the USB protocol.

Technical data	
Weight	60 g (2.1 oz.)
Cable length	1.8 m (5.9 ft.)
Connector	Standard USB-A to USB Mini-B

v1.02

1910490; Cigarette lighter adapter kit, 12 VDC, 1.2 m/3.9 ft.

General description
This cable is used to power the infrared camera from the cigarette lighter socket in a car.
Note: This is the same product as p/n 1196497.

Technical data	
Cable length	1.2 m (3.9 ft).

v1.0

T910816; HDMI to DVI cable 1.5 m

General description
This cable is used to connect the infrared camera with an external display.

Technical data	
Weight	213 g (7.5 oz.)
Cable length	1.5 m (4.9 ft.)
Connector	HDMI to DVI

v1.0

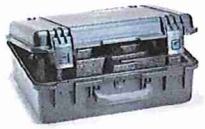
T910815; HDMI to HDMI cable 1.5 m

General description
This cable is used to connect the infrared camera with an external display.

Technical data	
Weight	195 g (6.9 oz.)
Cable length	1.5 m (4.9 ft.)
Connector	HDMI to HDMI

v1.0

T197555; Hard transport case for FLIR GF3XX-Series



General description
Hard transport case for FLIR GF300-Series

Technical data	
Weight	3.5 kg (7.7 lb.)
Size (L x W x H)	488 x 386 x 185 mm (19.2 x 15.2 x 7.3 in.)
Color	Black

v1.0

Optional Software

T197556; FLIR VideoReport

General description

FLIR VideoReport makes reports including videos easy. You can create and edit your video clips taken with the FLIR GF series cameras. Build your movie with a few simple drag-and-drops. Delete bad shots and include only the best scenes.
FLIR VideoReport is a software package specifically designed to provide an easy way to edit non-radiometric *.mp4 and *.avi video clips, taken with FLIR GF series cameras.

Key features:

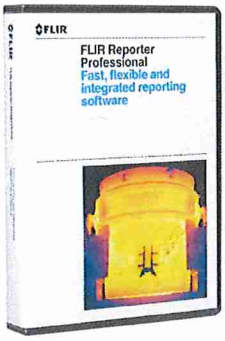
- Create a longer video clip from several shorter ones, using a storyboard.
- Rearrange the order of shorter video clips on a storyboard before you create a longer video clip.
- Trim a video clip and make the portions that you don't want to display invisible.
- Save any frame from a video clip as an image.
- Add a title screen with custom text.
- Add explanatory text to any video clip.
- Play video clips at several different speeds.
- Read out measurement values, stored as metadata from, an *.mp4 video clip.
- Add digital photos to a video clip.
- Add IR images to a video clip.
- Add GPS information from the camera to a video clip.
- Review file properties and information about the camera type, lens, and serial number.
- Split a video clip into two parts.
- Add markers (circle or arrow) as overlay graphics to any video clip.
- Auto Update function

System requirements

Operating system	Microsoft® Windows® XP with Service Pack 3 (SP3), 32-bit Microsoft® Windows® Vista® with Service Pack 1 (SP1), 32-bit and 64-bit Microsoft® Windows® Vista® with Service Pack 2 (SP2), 32-bit and 64-bit Note: Run Windows® Update before you install FLIR VideoReport
Hardware requirements	Personal computer with a 1 GHz 32-bit (x86) processor 1 GB of RAM (minimum) 40 GB hard disk, with at least 15 GB available hard disk space DVD-ROM drive Support for DirectX® 9 graphics with: - WDDM driver - 128 MB of graphics memory (minimum) - Pixel shader 2.0 in hardware - 32 bits per pixel Super VGA (1024 x 768) or higher-resolution monitor Internet access Audio output Keyboard and Microsoft® mouse, or a compatible pointing device Note: Actual requirements and product functionality may vary based on your system configuration.

v1.01

T197717; FLIR Reporter 8.5 SP2, Professional



General description

FLIR Reporter Professional is a powerful software for creating compelling and professional, fully customized, easy-to-interpret maintenance reports.

Professional Report Wizard guides you step-by-step in combining all IR inspection data - infrared and visual images, temperature measurements, and text notes – into a professional, easy-to-interpret maintenance report.

Key features:

- Flexible report page design and layout for customized reports
- Use quick insert function to easily create custom report pages
- Fully integrated with standard Microsoft Word
- Generates reports in standard MS Office format and PDF-format
- Powerful temperature analysis
- Triple Fusion Picture-in-Picture (movable, sizable, scalable)
- Rapid report manager supporting automatic report generation by drag-and-drop
- Trending functionality
- Automatic link to Google™ Maps for images with GPS coordinates
- Automatic summary table for the report
- Fine tune images and make full temperature analysis directly in Microsoft Word
- Spell check
- Create your own formulas including measurement values from images
- Play radiometric sequences directly in the report
- Search functionality to quickly finding images for your report
- Panorama tool for combining several images to a larger image
- Support for GF series IR images
- Auto Update function
- Office 2003 (32-bit), Office 2007 (32-bit) and Office 2010 (32-bit)
- Windows 7 (32 and 64-bit), Windows Vista (32 and 64-bit)
- Support for MeterLink™ data
- *.docx compatibility

Release notes

Version	8.5 SP2
New features	• --- News in SP2: • Office 2010 (32 bit) • Minor bug fixes • --- News in SP1: • Full support for Windows® 7 • Support for MeterLink™ data • *.docx compatibility

Scope of delivery

- FLIR Reporter Professional
- Getting Starting Guide

System requirements

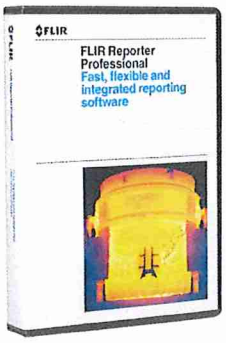
Operating system	Windows XP, 32-bit Windows Vista, 32-bit Windows Vista, 64-bit Windows 7, 32-bit Windows 7, 64-bit

v1.02

FLIR
www.flir.com/thg

44402-0101_en_41.mif

T197717L5; FLIR Reporter 8.5 SP2, Professional, 5 user licenses



General description

FLIR Reporter Professional is a powerful software for creating compelling and professional, fully customized, easy-to-interpret maintenance reports.

Professional Report Wizard guides you step-by-step in combining all IR inspection data - infrared and visual images, temperature measurements, and text notes – into a professional, easy-to-interpret maintenance report.

Key features:

- Flexible report page design and layout for customized reports
- Use quick insert function to easily create custom report pages
- Fully integrated with standard Microsoft Word
- Generates reports in standard MS Office format and PDF-format
- Powerful temperature analysis
- Triple Fusion Picture-in-Picture (movable, sizable, scalable)
- Rapid report manager supporting automatic report generation by drag-and-drop
- Trending functionality
- Automatic link to Google™ Maps for images with GPS coordinates
- Automatic summary table for the report
- Fine tune images and make full temperature analysis directly in Microsoft Word
- Spell check
- Create your own formulas including measurement values from images
- Play radiometric sequences directly in the report
- Search functionality to quickly finding images for your report
- Panorama tool for combining several images to a larger image
- Support for GF series IR images
- Auto Update function
- Office 2003 (32-bit), Office 2007 (32-bit) and Office 2010 (32-bit)
- Windows 7 (32 and 64-bit), Windows Vista (32 and 64-bit)
- Support for MeterLink™ data
- *.docx compatibility

Release notes

Version	8.5 SP2
New features	• --- News in SP2: • Office 2010 (32 bit) • Minor bug fixes • --- News in SP1: • Full support for Windows® 7 • Support for MeterLink™ data • *.docx compatibility

Scope of delivery

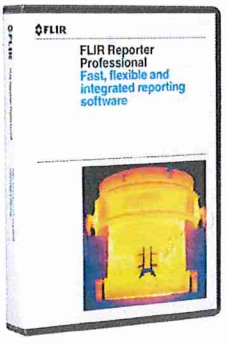
- FLIR Reporter Professional
- Getting Starting Guide
- 5 user licenses

System requirements

Operating system	Windows XP, 32-bit Windows Vista, 32-bit Windows Vista, 64-bit Windows 7, 32-bit Windows 7, 64-bit

v1.01

T197717L10; FLIR Reporter 8.5 SP2, Professional, 10 user licenses



General description

FLIR Reporter Professional is a powerful software for creating compelling and professional, fully customized, easy-to-interpret maintenance reports.

Professional Report Wizard guides you step-by-step in combining all IR inspection data - infrared and visual images, temperature measurements, and text notes – into a professional, easy-to-interpret maintenance report.

Key features:

- Flexible report page design and layout for customized reports
- Use quick insert function to easily create custom report pages
- Fully integrated with standard Microsoft Word
- Generates reports in standard MS Office format and PDF-format
- Powerful temperature analysis
- Triple Fusion Picture-in-Picture (movable, sizable, scalable)
- Rapid report manager supporting automatic report generation by drag-and-drop
- Trending functionality
- Automatic link to Google™ Maps for images with GPS coordinates
- Automatic summary table for the report
- Fine tune images and make full temperature analysis directly in Microsoft Word
- Spell check
- Create your own formulas including measurement values from images
- Play radiometric sequences directly in the report
- Search functionality to quickly finding images for your report
- Panorama tool for combining several images to a larger image
- Support for GF series IR images
- Auto Update function
- Office 2003 (32-bit), Office 2007 (32-bit) and Office 2010 (32-bit)
- Windows 7 (32 and 64-bit), Windows Vista (32 and 64-bit)
- Support for MeterLink™ data
- *.docx compatibility

Release notes

Version	8.5 SP2
New features	• --- News in SP2: • Office 2010 (32 bit) • Minor bug fixes • --- News in SP1: • Full support for Windows® 7 • Support for MeterLink™ data • *.docx compatibility

Scope of delivery

- FLIR Reporter Professional
- Getting Starting Guide
- 10 user licenses

System requirements

Operating system	Windows XP, 32-bit Windows Vista, 32-bit Windows Vista, 64-bit Windows 7, 32-bit Windows 7, 64-bit

v1.01

FLIR®
www.flir.com/thg

44402-0101_en_41.mif

Attachment VII – Infrared Imaging Results

Base	Procedure	Group	Task	Value	Data Filter	Date	Time	Notes	User Name	Severity	Severity Level
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	7/8/2021	10:23:40		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	7/8/2021	10:24:05		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	7/8/2021	10:24:11		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	7/8/2021	10:24:34		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	7/8/2021	10:26:34		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	7/8/2021	10:29:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	7/8/2021	10:48:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	7/8/2021	10:49:42		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	7/8/2021	10:54:35		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	No	Target	7/8/2021	11:01:19		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	7/8/2021	11:02:51		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	7/8/2021	11:03:02		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	7/8/2021	11:07:37		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	7/8/2021	11:11:47		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	7/8/2021	11:17:55		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	7/8/2021	11:36:41		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	7/8/2021	11:58:45		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	7/8/2021	11:58:58		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	7/8/2021	11:59:05		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	7/8/2021	11:59:32		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	7/8/2021	11:59:40		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	7/8/2021	11:59:46		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the camera in automatic mode?	Yes	Target	7/8/2021	11:59:50		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	ACU Valve Imaging	Were any valves found to be leaking?	No	Target	7/8/2021	11:59:57		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	BEU Valve Imaging	Were any valves found to be leaking?	No	Target	7/8/2021	12:00:05		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	7/8/2021	12:00:30		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	7/8/2021	12:00:37		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	7/8/2021	12:00:40		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	Flir Camera	Is the camera in automatic mode?	Yes	Target	7/8/2021	12:00:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	ACU Connector Imaging	Were any connectors found to be leaking?	No	Target	7/8/2021	12:00:51		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	BEU Connector Imaging	Were any connectors found to be leaking?	No	Target	7/8/2021	12:00:58		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	7/22/2021	09:12:21		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	7/22/2021	09:12:30		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	7/22/2021	09:12:35		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	7/22/2021	09:12:42		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	7/22/2021	09:16:57		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	7/22/2021	09:30:50		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	7/22/2021	09:31:12		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	7/22/2021	09:33:01		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	7/22/2021	09:36:45		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	No	Target	7/22/2021	10:05:24		Flir, Fugem	Alert	10
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	7/22/2021	10:07:12		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	7/22/2021	10:07:45		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	7/22/2021	10:10:41		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	7/22/2021	10:14:04		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	7/22/2021	10:22:58		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	7/22/2021	10:23:14		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	7/22/2021	10:23:31		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	7/22/2021	10:33:43		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	7/22/2021	16:07:39		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	8/5/2021	08:53:47		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	8/5/2021	08:53:53		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	8/5/2021	08:53:59		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	8/5/2021	08:54:10		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	8/5/2021	08:56:20		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	8/5/2021	09:20:24		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	8/5/2021	09:20:55		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	8/5/2021	09:22:43		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	8/5/2021	09:26:09		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	No	Target	8/5/2021	09:30:30		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	8/5/2021	09:34:12		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	8/5/2021	09:34:35		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	8/5/2021	09:37:57		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	8/5/2021	09:41:54		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	8/5/2021	10:40:57		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	8/5/2021	10:41:06		Flir, Fugem	Normal	0

Base	Procedure	Group	Task	Value	Data Filter	Date	Time	Notes	User Name	Severity	Severity Level
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	8/5/2021	10:59:33		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	8/5/2021	10:59:42		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	8/5/2021	11:01:11		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	8/5/2021	11:01:33		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	8/5/2021	11:01:39		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	8/5/2021	11:01:42		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the camera in automatic mode?	Yes	Target	8/5/2021	11:01:46		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	ACU Valve Imaging	Were any valves found to be leaking?	No	Target	8/5/2021	11:01:55		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	BEU Valve Imaging	Were any valves found to be leaking?	No	Target	8/5/2021	11:02:06		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	8/19/2021	09:26:40		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	8/19/2021	09:26:49		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	8/19/2021	09:26:54		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	8/19/2021	09:27:02		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	8/19/2021	09:27:10		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	8/19/2021	09:46:45		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	8/19/2021	09:47:05		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	8/19/2021	09:48:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	8/19/2021	09:51:31		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	No	Target	8/19/2021	09:56:02		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	8/19/2021	09:56:57		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	8/19/2021	09:58:27		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	8/19/2021	10:01:20		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	8/19/2021	10:09:45		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	8/19/2021	10:16:18		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	8/19/2021	10:16:27		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	8/19/2021	10:26:34		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	8/19/2021	10:26:54		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	8/19/2021	10:27:06		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	9/2/2021	10:18:36		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	9/2/2021	10:18:43		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	9/2/2021	10:18:47		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	9/2/2021	10:18:57		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	9/2/2021	10:23:40		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	9/2/2021	10:37:56		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	9/2/2021	10:39:26		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	9/2/2021	10:40:39		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	9/2/2021	10:43:35		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	9/2/2021	10:51:54		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	9/2/2021	10:52:49		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	9/2/2021	10:55:28		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	9/2/2021	10:58:48		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	9/2/2021	11:23:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	9/2/2021	11:23:52		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	9/2/2021	11:46:11		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	9/2/2021	11:46:18		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	9/3/2021	12:47:42		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	No	Target	9/3/2021	12:47:53		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	9/16/2021	08:34:31		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	9/16/2021	08:34:46		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	9/16/2021	08:34:52		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	9/16/2021	08:35:05		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	9/16/2021	08:37:46		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	9/16/2021	09:09:11		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	9/16/2021	09:09:27		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	9/16/2021	09:12:54		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	9/16/2021	09:15:15		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	Yes	[redacted]	9/16/2021	09:24:37		Flir, Fugem	Alert	10
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	9/16/2021	09:27:19		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	9/16/2021	09:28:55		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	9/16/2021	09:31:40		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	9/16/2021	09:35:07		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	9/16/2021	10:06:58		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	9/16/2021	10:07:10		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	9/16/2021	10:33:01		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	9/16/2021	10:33:09		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	9/16/2021	10:33:33		Flir, Fugem	Normal	0

Base	Procedure	Group	Task	Value	Data Filter	Date	Time	Notes	User Name	Severity	Severity Level
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	User Information	Enter your name in the text field at the bottom	Chase Richmond	Target	9/16/2021	10:34:10		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	9/16/2021	10:34:16		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	9/16/2021	10:34:20		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the camera in automatic mode?	Yes	Target	9/16/2021	10:34:28		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	ACU Valve Imaging	Were any valves found to be leaking?	No	Target	9/16/2021	10:34:37		Flir, Fugem	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	BEU Valve Imaging	Were any valves found to be leaking?	No	Target	9/16/2021	10:34:55		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Wade Miller	Target	9/30/2021	08:07:24		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	9/30/2021	10:07:00		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	9/30/2021	10:07:12		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	9/30/2021	10:15:12		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	9/30/2021	10:16:16		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	9/30/2021	10:21:06		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	9/30/2021	10:24:28		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	Yes	[redacted]	9/30/2021	10:31:42		Flir, Fugem	Alert	10
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	9/30/2021	10:35:35		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	9/30/2021	10:37:31		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	9/30/2021	10:40:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	9/30/2021	10:43:57		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	9/30/2021	11:27:04		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	9/30/2021	11:38:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	9/30/2021	11:43:56		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	9/30/2021	11:51:21		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	9/30/2021	11:51:39		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	9/30/2021	11:59:03		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	9/30/2021	15:04:37		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Wade Miller	Target	10/12/2021	10:34:38		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	10/12/2021	10:35:26		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	10/12/2021	10:35:32		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	10/12/2021	10:35:44		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	10/12/2021	10:39:27		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	10/12/2021	10:40:26		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	10/12/2021	10:42:35		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	10/12/2021	10:57:11		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	10/12/2021	10:57:32		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	10/12/2021	10:59:41		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	10/12/2021	11:02:14		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	10/12/2021	11:11:34		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	10/12/2021	11:11:45		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	10/12/2021	11:11:55		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	10/12/2021	11:18:11		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	10/12/2021	11:18:19		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	10/12/2021	11:31:47		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	10/12/2021	14:35:16		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	Yes	[redacted]	10/12/2021	14:36:52		Flir, Fugem	Alert	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Wade Miller	Target	10/25/2021	09:01:49		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	10/25/2021	09:02:22		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	10/25/2021	09:03:32		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	10/25/2021	09:59:35		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	10/25/2021	10:04:31		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	10/25/2021	10:05:40		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	10/25/2021	10:08:58		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	No	Target	10/25/2021	10:15:16		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	10/25/2021	10:20:28		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	10/25/2021	10:24:32		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	10/25/2021	10:25:55		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	10/25/2021	10:36:48		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	10/25/2021	10:37:19		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	10/25/2021	10:42:09		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	10/25/2021	10:42:17		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	10/25/2021	10:44:54		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	10/25/2021	10:45:10		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	10/25/2021	11:02:18		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	10/25/2021	12:19:10		Flir, Fugem	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	User Information	Enter your name in the text field at the bottom	Wade Miller	Target	11/10/2021	08:17:43		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	11/10/2021	08:17:56		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the weather fair or cloudy?	Cloudy	Target	11/10/2021	08:18:10		Carlisle, James	Normal	0

Base	Procedure	Group	Task	Value	Data Filter	Date	Time	Notes	User Name	Severity	Severity Level
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Flir Camera	Is the camera in automatic mode?	Yes	Target	11/10/2021	08:48:46		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-370	Were there any visible emissions from tank?	No	Target	11/10/2021	08:56:53		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-380	Were there any visible emissions from tank?	No	Target	11/10/2021	08:57:09		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-381	Were there any visible emissions from tank?	No	Target	11/10/2021	08:57:27		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-351	Were there any visible emissions from tank?	No	Target	11/10/2021	09:13:15		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-352	Were there any visible emissions from tank?	No	Target	11/10/2021	09:17:21		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank D-379	Were there any visible emissions from tank?	No	Target	11/10/2021	09:20:30		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-314	Were there any visible emissions from tank?	No	Target	11/10/2021	09:26:02		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank J-313	Were there any visible emissions from tank?	No	Target	11/10/2021	09:28:42		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Atmospheric PRV Imaging	Were any Atmospheric PRV's found leaking?	No	Target	11/10/2021	09:50:20		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	11/10/2021	09:50:33		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	BEU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	11/10/2021	09:50:43		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Is the 25 mm lens being used?	Yes	Target	11/10/2021	09:50:54		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	ACU Infrared Pump Imaging	Were any pumps imaged found leaking?	No	Target	11/10/2021	10:04:31		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-359	Were there any visible emissions from tank?	No	Target	11/10/2021	10:04:47		Carlisle, James	Normal	0
AROMATICS	FUGEM Infrared Imaging Bi-weekly	Tank F-361	Were there any visible emissions from tank?	No	Target	11/10/2021	11:44:29		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	User Information	Enter your name in the text field at the bottom	Wade Miller	Target	11/11/2021	09:30:23		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	11/11/2021	09:30:31		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	11/11/2021	09:30:38		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	Flir Camera	Is the camera in automatic mode?	Yes	Target	11/11/2021	09:30:44		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	ACU Connector Imaging	Were any connectors found to be leaking?	No	Target	11/11/2021	09:30:52		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Connector Imaging Quarterly	BEU Connector Imaging	Were any connectors found to be leaking?	No	Target	11/11/2021	09:31:14		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	User Information	Enter your name in the text field at the bottom	Wade Miller	Target	11/11/2021	09:31:43		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the 50 mm lens being used?	Yes	Target	11/11/2021	09:31:51		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the weather fair or cloudy?	Fair	Target	11/11/2021	09:31:55		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	Flir Camera	Is the camera in automatic mode?	Yes	Target	11/11/2021	09:32:01		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	ACU Valve Imaging	Were any valves found to be leaking?	No	Target	11/11/2021	09:32:07		Carlisle, James	Normal	0
AROMATICS	FUGEM ACU/BEU Valve Imaging Monthly	BEU Valve Imaging	Were any valves found to be leaking?	No	Target	11/11/2021	09:32:13		Carlisle, James	Normal	0

Attachment VIII – Repairs

Inspection results did not show any failures. No repairs required.

Attachment IX – Manhole 4 Monitoring Results

MANHOLE# 4 CARBON CANISTERS

Date	Time	Temp	Humidity	PRIMARY	PPM	Background	Actual	Ultra RAE	Secondary	PPM	Background	Actual	Ultra RAE	Horn	Background		TECH CODE
7/6/2021	2:17 PM	82°F	75%	B-1	4	0	4	N/A	B-2	4	0	4	N/A	3	0	BOTH CANS PASSED ALL TESTS	CR
7/14/2021	7:40 AM	77°F	96%	B-1	3	0	3	N/A	B-2	6	0	6	N/A	3	0	BOTH CANS PASSED ALL TESTS	CR
7/20/2021	8:17 AM	75°F	96%	B-1	10	0	10	N/A	B-2	8	0	8	N/A	0	0	BOTH CANS PASSED ALL TESTS	CR
7/27/2021	7:18 AM	81°F	89%	B-1	2	0	2	N/A	B-2	2	0	2	N/A	1	0	BOTH CANS PASSED ALL TESTS	CR
8/5/2021	8:12 AM	79°F	73%	B-1	1	0	1	N/A	B-2	1	0	1	N/A	1	0	BOTH CANS PASSED ALL TESTS	CR
8/10/2021	7:41 AM	81°F	91%	B-1	221	0	221	N/A	B-2	2	0	2	N/A	1	0	B-1 FAILED TEST	CR
8/10/2021	1:48 PM	91°F	59%	A-1	3642	0	3642	N/A	A-2	2148	0	2148	N/A	1	0	BOTH CANS FAILED ALL TESTS	CR
8/11/2021	7:41 AM	81°F	90%	A-1	43	0	43	N/A	A-2	22	0	22	N/A	8	0	BOTH CANS PASSED ALL TESTS	CR
8/17/2021	7:10 AM	75°F	98%	B-1	1624	0	1624	N/A	B-2	9	0	9	N/A	12	0	B-1 FAILED TEST	CR
8/17/2021	3:23 PM	88°F	66%	B-1	9	0	9	N/A	B-2	9	0	9	N/A	9	0	BOTH CANS PASSED ALL TESTS	CR
8/24/2021	8:03 AM	79°F	91%	B-1	1302	0	1302	N/A	B-2	15	0	15	N/A	11	0	B-1 FAILED TEST	CR
8/25/2021	7:18 AM	81°F	90%	B-1	12	0	12	N/A	B-2	28	0	28	N/A	9	0	BOTH CANS PASSED ALL TESTS	CR
9/1/2021	9:40 AM	89°F	74%	B-1	13	0	13	N/A	B-2	11	0	11	N/A	8	0	BOTH CANS PASSED ALL TESTS	CR
9/7/2021	10:08 AM	82°F	59%	B-1	561	0	561	N/A	B-2	954	0	954	N/A	22	0	BOTH CANS FAILED ALL TESTS	CR
9/7/2021	2:05 PM	88°F	38%	B-1	37	0	37	N/A	B-2	25	0	25	N/A	6	0	BOTH CANS PASSED ALL TESTS	CR
9/15/2021	8:19 AM	72°F	94%	B-1	324	0	324	N/A	B-2	102	0	102	N/A	21	0	BOTH CANS FAILED ALL TESTS	CR
9/15/2021	2:23 PM	79°F	76%	B-1	17	0	17	N/A	B-2	12	0	12	N/A	10	0	BOTH CANS PASSED ALL TESTS	WM
9/21/2021	8:15 AM	78°F	96%	B-1	9	0	9	N/A	B-2	24	0	24	N/A	9	0	BOTH CANS PASSED ALL TESTS	WM
9/29/2021	9:20 AM	71°F	97%	B-1	47	0	47	N/A	B-2	8	0	8	N/A	13	0	BOTH CANS PASSED ALL TESTS	WM
10/5/2021	10:00 AM	78°F	62%	B-1	972	0	972	N/A	B-2	699	0	699	N/A	9	0	BOTH CANS FAILED ALL TESTS	WM
10/5/2021	3:00 PM	85°F	37%	A-1	2	0	2	N/A	A-2	3	0	3	N/A	7	0	BOTH CANS PASSED ALL TESTS	WM
10/13/2021	11:30 AM	85°F	66%	A-1	48	0	48	N/A	A-2	2	0	2	N/A	18	0	BOTH CANS PASSED ALL TESTS	WM
10/19/2021	10:30 AM	73°F	64%	A-1	36	0	36	N/A	A-2	18	0	18	N/A	9	0	BOTH CANS PASSED ALL TESTS	WM
10/26/2021	10:00 AM	79°F	89%	A-1	605	0	605	N/A	A-2	412	0	412	N/A	19	0	BOTH CANS FAILED ALL TESTS	WM
10/26/2021	2:15 PM	81°F	76%	B-1	13	0	13	N/A	B-2	6	0	6	N/A	12	0	BOTH CANS PASSED ALL TESTS	WM
11/2/2021	10:30 AM	73°F	70%	B-1	17	0	17	N/A	B-2	2	0	2	N/A	8	0	BOTH CANS PASSED ALL TESTS	WM
11/9/2021	8:15 AM	64°F	87%	B-1	47	0	47	N/A	B-2	2	0	2	N/A	13	0	BOTH CANS PASSED ALL TESTS	WM
11/16/2021	8:00 AM	70°F	56%	B-1	48	0	48	N/A	B-2	45	0	45	N/A	24	0	BOTH CANS PASSED ALL TESTS	WM
11/23/2021	8:30 AM	66°F	44%	B-1	46	0	46	N/A	B-2	48	0	48	N/A	11	0	BOTH CANS PASSED ALL TESTS	WM
12/1/2021	8:30 AM	61°F	94%	B-1	1902	0	1902	N/A	B-2	534	0	534	N/A	3	0	BOTH CANS FAILED ALL TESTS	WM
12/1/2021	2:05 PM	76°F	52%	A-1	8	0	8	N/A	A-2	1	0	1	N/A	9	0	BOTH CANS PASSED ALL TESTS	WM
12/7/2021	10:45 AM	57°F	76%	A-1	5	0	5	N/A	A-2	1	0	1	N/A	4	0	BOTH CANS PASSED ALL TESTS	WM
12/14/2021	9:15 AM	69°F	100%	A-1	7	0	7	N/A	A-2	8	0	8	N/A	21	0	BOTH CANS PASSED ALL TESTS	WM
12/21/2021	9:30 AM	59°F	40%	A-1	12	0	12	N/A	A-2	1	0	1	N/A	9	0	BOTH CANS PASSED ALL TESTS	WM
12/30/2021	1:45 PM	82°F	63%	A-1	1	0	1	N/A	A-2	1	0	1	N/A	7	0	BOTH CANS PASSED ALL TESTS	WM